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柳叶藓科2种1变种在中国的新记录

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Two species and one variety of the Amblystegiaceae (Musci) new to China

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Abstract During our recent study of the Chinese Amblystegiaceae, we found that *Calliergon megalophyllum* Mikut., *Drepanocladus trichophyllus* (Warnst.) Podp. and *Cratoneuron filicinum* (Hedw.) Spruce var. *atro-virens* (Brid.) Ochyra are new to China. The occurrance of *Hygroamblystegium noterophilum* (Sull. et Lesq.) Warnst. in China as previously recorded represents only a misidentification. All the Chinese specimens referred to this species should be identified as *Cratoneuron filicinum* (Hedw.) Spruce var. *atro-virens* (Brid.) Ochyra.

Key words Amblystegiaceae; New records; China

摘要 笔者在编研《中国苔藓志》第七卷的过程中，发现柳叶藓科中的圆叶湿原藓 *Calliergon megalophyllum* Mikut.、毛叶镰刀藓 *Drepanocladus trichophyllus* (Warnst.) Podp. 和牛角藓宽肋变种 *Cratoneuron filicinum* (Hedw.) Spruce var. *atro-virens* (Brid.) Ochyra 为中国首次记录，而沼生湿柳藓 *Hygroamblystegium noterophilum* (Sull. et Lesq.) Warnst. 属错误鉴定，所有以前被定为该种的中国标本应改为牛角藓宽肋变种。

关键词 柳叶藓科；新记录；中国

The Amblystegiaceae are a large family of pleurocarpous mosses, predominantly distributed in arctic to temperate areas in the Northern Hemisphere. According to Redfearn *et al*. (1996), 23 genera, 67 species, 12 varieties and 3 forms of this family have been recorded in China. During our recent study of the Chinese Amblystegiaceae, we found that *Calliergon megalophyllum* Mikut. and *Drepanocladus trichophyllus* (Warnst.) Podp. are new to China. All of the Chinese specimens previously named *Hygroamblystegium noterophilum* (Sull. et Lesq.) Warnst. actually should be identified as *Cratoneuron filicinum* (Hedw.) Spruce var. *atrovirens* (Brid.) Ochyra, a variety recorded for the first time in China.

1　圆叶湿原藓　新拟　图1

Calliergon megalophyllum Mikut., Bryoth. Balt., Bog. 34. 1908.　[Fig. 1]

Plants usually rather robust, dark-green, shining. Stems up to 20~35 cm long, slightly pinnately branched, round or pentagonal in cross section; central strand distinct; cortical cells small, somewhat incrassate, in 2~3 layers; pseudoparaphyllia large and foliose. Stem-leaves large, 5~6 mm long, 4~5 mm wide, erect-spreading, concave, oblong-ovate, obtuse, abruptly narrowed at leaf base, not or slightly decurrent; costa single and thin, extending to apex or 4/5 the leaf length; median leaf cells linear-flexuous, 40~70 μm long and about 5 μm wide, shorter and wider towards apex and with well-defined initial-cells, somewhat hyaline-inflated; alar cells wider, hyaline-inflated,

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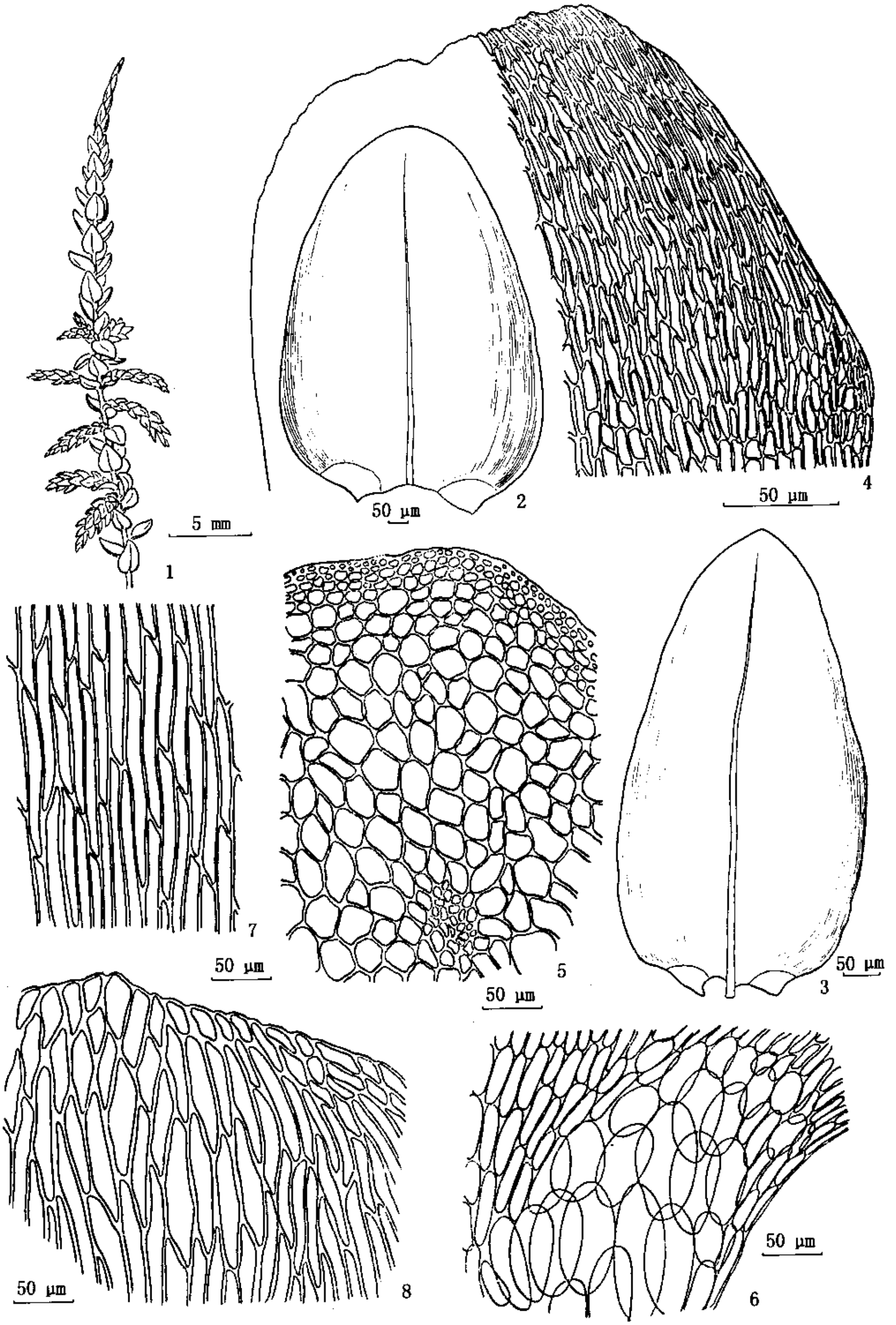

Fig. 1 1 ~ 8. *Calliergon megalophyllum* Mikut. 1. Plants; 2. Stem leaf; 3. Branch leaf; 4. Pseudoparaphyllium; 5. Cross section of stem; 6. Basal leaf cells; 7. Median leaf cells; 8. Apical cells of leaf
(Drawn by Y. H. Wu and J. H. Fang from H. J. Meng 561).

round-hexagonal to rectangular, forming a sharply limited group and usually extending to 1/2 leaf base. Sporophyte not seen.

China. **Heilongjiang**: Xiaoxinganling, Dailing, C. Gao 310 (IFP). **Inner Mongolia**: Daxinganling, Wuerqihang, H. J. Meng 561 (HIMC).

C. megalophyllum differs from the other species of *Calliergon* by its large gametophyte. This species is a subarctic element, previously found in Siberia, NW Russia and Finland (Karczmarz, 1971). The collections cited above represent the first record of this species in China.

2 毛叶镰刀藓 新拟 图2

Drepanocladus trichophyllus (Warnst.) Podp. in Zpravy., Komm. Prirod. Prozk. Moravy Odd. Bot. 5: 36. 1908.—— *Warnstorfia trichophylla* (Warnst.) Tuom. et T. Kop., Ann. Bot. Fenn. 16(3): 223. 1979. ——*Drepanocladus rotae* (De Not.) Warnst. var. *trichophyllus* Warnst., Krypt. Fl. Brandenburg 2: 1049. 1906. [Fig. 2]

Plants robust, brownish-green. Stems up to 15 ~ 20 cm long, densely pinnately or subpinnately branched, sometimes hooked at tips, round to elliptic in cross section, with small central strand; cortical cells small, incrassate or rather sclerenchymatous, in 2 ~ 3 layers; pseudoparaphyllia few, small and foliose. Stem-leaves long, ovate-lanceolate to triangular-lanceolate, 4 ~ 7 mm long, 0.5 ~ 0.8 mm wide, gradually narrowed into a long acumen; costa very strong, about 85 μm wide at base, sometimes long excurrent; margins finely serrate; median leaf cells linear-flexuous, 70 ~ 140 μm long and 2.5 ~ 6.5 μm wide, incrassate, wider and shorter towards base, somewhat strongly incrassate and porose; alar cells abruptly enlarged, inflated, brown-colored, arranged in a single row extending to costa at leaf base, forming decurrent auricles. Branch-leaves narrower, triangular-lanceolate, 4 ~ 5 mm long, 0.3 mm wide. Sporophyte not seen.

China. **Heilongjiang**: Lake Jingpo, Jiangshanjiao, C. Gao & G. C. Zhang 3333 (IFP).

The distinguishing character of this species is that its strong costa sometimes is long excurrent. Since this species has been recorded from Europe (Tuomikoski, Koponen, 1979; Nyholm, 1965), Russia, North America and Japan (Kanda 1975), it is natural to find its distribution in Northeast China.

3 牛角藓宽肋变种 新拟 图3

Cratoneuron filicinum (Hedw.) Spruce var. **atro-virens** (Brid.) Ochyra, Journ. Hattori Bot. Lab. 67: 210. 1989.——*Hypnum vallis-clausae* Brid. var. *atro-virens* Brid., Bryol. Univ. 2: 534. 1827. [Fig. 3]

Hygroamblystegium noterophilum auct. non. (Sull. et Lesq.) Warnst: C. Gao, Flora Muscorum Chinae Boreali-Orientalis. 276. 1977.

Plants robust and coarse, yellowish-green or dark brownish-green, in dense mats. Stem erect-ascending, 3 ~ 10 cm long, irregularly or typically pinnately branched, in cross section round to elliptical, central strand distinct, small; cortical cells small, thick-walled, 3 ~ 5 layers; paraphyllia few on the stem, foliose, ovate-lanceolate or lanceolate. Leaves on older parts of plants usually denuded, appearing hispid and bristly because of persistent costae that remain attached to stems and

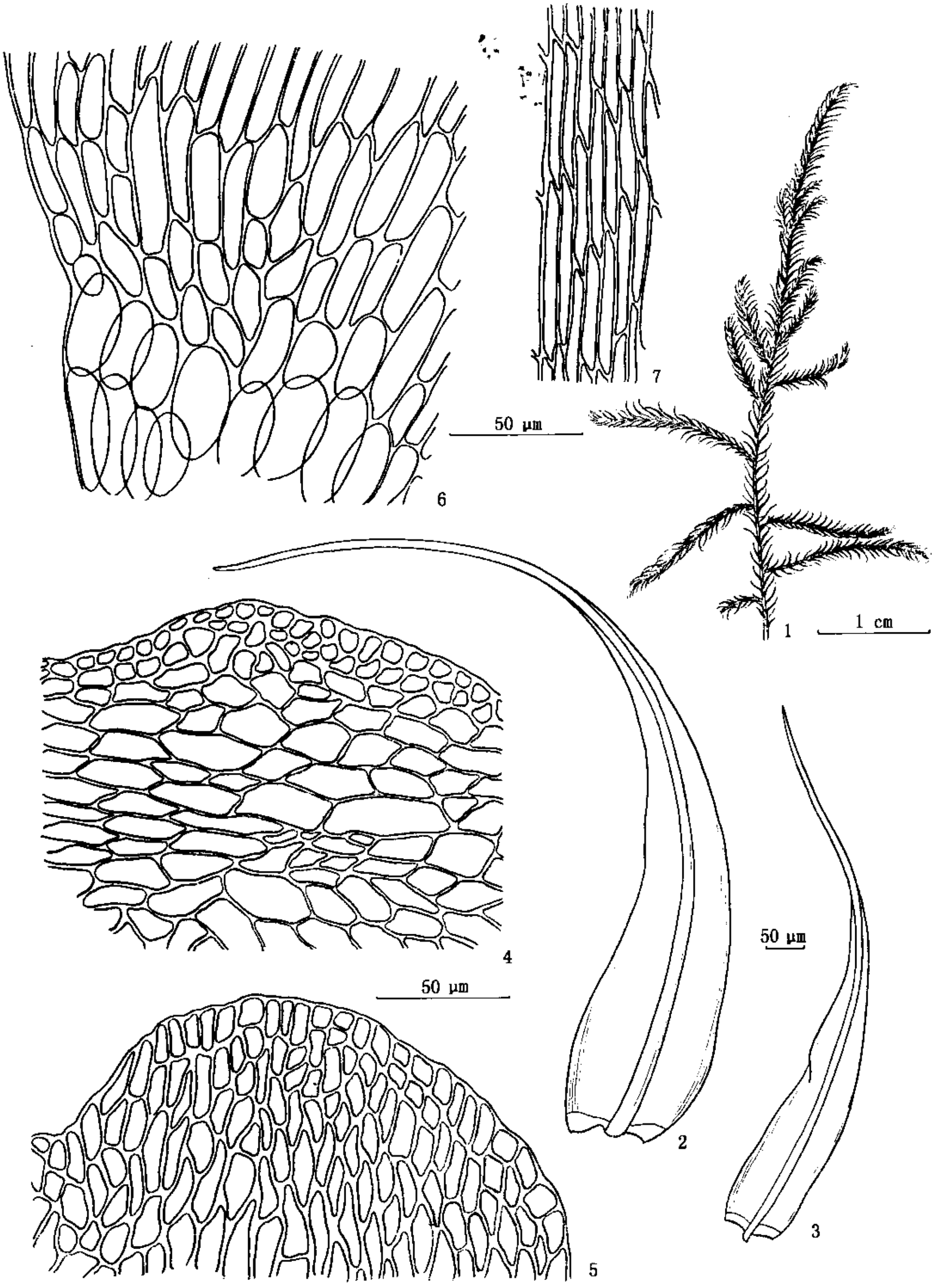

Fig. 2 1~7. *Drepanocladus trichophyllus* (Warnst.) Podp. 1. Plants; 2. Stem leaf; 3. Branch leaf; 4. Cross section of stem; 5. Pseudoparaphyllium; 6. Basal leaf cells; 7. Median leaf cells (Drawn by Y. H. Wu and J. H. Feng from C. Gao & G. C. Zhang 3333).

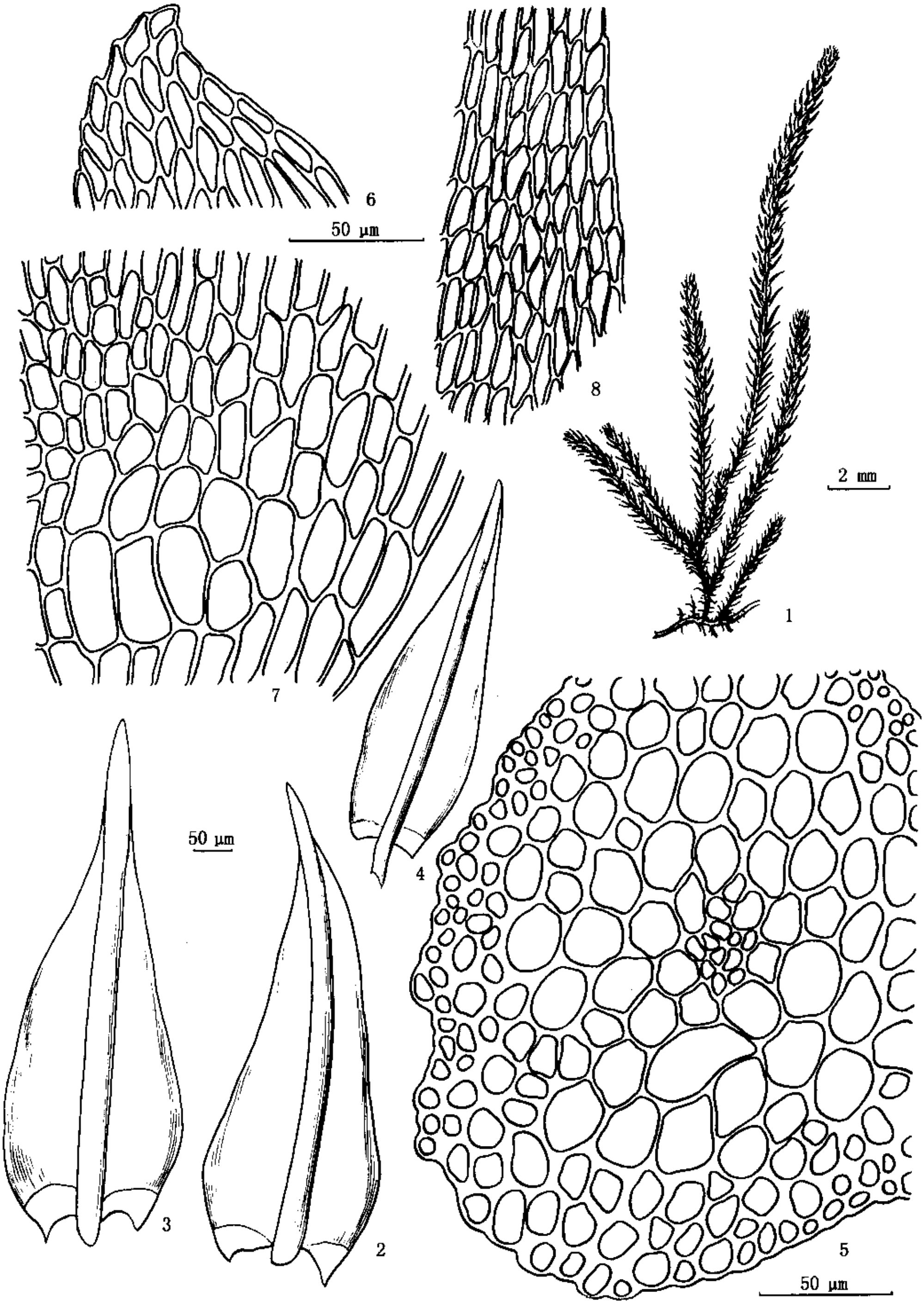

Fig. 3　1 ~ 8. *Cratoneuron filicinum* (Hedw.) Spruce var. *atro-virens* (Brid.) Ochyra　1. Plants; 2 ~ 3. Stem leaves; 4. Branch leaf; 5. Cross section of stem; 6. Paraphyllium cells; 7. Basal leaf cells; 8. Median leaf cells (Drawn by Y. H. Wu and J. H. Fang from Y. H. Wu 1128).

branches after erosion of leaf laminae. Stem leaves erect, lanceolate, 2 ~ 3 mm long; margins serrate or entire; laminar cells short oblong to oblong-rhomboidal, 20 ~ 30 μm long and 6 ~ 8 μm wide;

alar cells enlarged, usually yellowish-brown, somewhat thin-walled, oblong-rhomboidal. Costa yellowish, very strong and thick, 100 ~ 140 μm wide at base, long excurrent into stout, cuspidate apex. Sporophyte not seen.

China. **Inner Mongolia**: Mt. Daqing, Lamadong, alt. 1300 m, Z. G. Tong 847 (PE); Daxinganling, Wuerqihang, S. J. Pu 209 (IFP). **Xinjiang**: Mt. Bogeda, J. C. Zhao & J. Wang 2479 (HBNU). **Sichuan**: Mt. Liangshan, Q. Li 1992 (IFP); Muli, C. Gao, 21110, Q. Li 1865 (IFP). **Jilin**: Mt. Changbai, T. Cao & B. Y. Yuan 361, C. Gao 1056, 1058 (IFP). **Liaoning**: Kuandian, Baishilazi, T. Cao & S. Z. Wang 38726 (IFP). **Shanxi**: Jinci, C. Gao 00510, 40511 (IFP). **Beijing**: Mt. Xiangshan, Biyunsi, C. H. Gao 5597 (SHM); Huairou, Mt. Yunmeng, alt. 70 m, Y. H. Wu 1128, 1129 (IFP). **Jiangsu**: Nanjing, Zhenzhuquan, J. X. Hang 22119 (SHM). **Gangsu**: Mt. Shanming, alt. 4000 m, Z. B. Wang 4603 (IWH). **Henan**: Nankou, Heilongtang, Q. W. Wang 1890 (PE). **Yunnan**: Lijiang, W. X. Xu 596, 597 (HKAS).

This variety is different from its typical variety, var. *filicinum*, by its strong costa excurrent into stout, cuspidate apex. Gao (1977) recorded *Hygroamblystegium noterophilum* (Sull. et Lesq.) Warnst. in NE China. But the illustration and description of this species provided by Gao (1977) are different from those provided by Crum & Anderson (1981). After having examined the Chinese specimens referred to *H. noterophilum*, we found that they are very different from those of North America, such as Steven P. Churchill 8903 (NY), and actually should be identified as *Cratoneuron filicinum* (Hedw.) Spruce var. *atrovirens* (Brid.) Ochyra.

Ochyra (1989) suggested that the name of this variety is the only available one that can be used for plants that have been commonly referred to as *Cratoneuron filicinum* (Hedw.) Spruce var. *fallax* (Brid.) G. Roth. by numerous bryologists. This variety is common to Europe, Russia, China, Japan, Korea, Mongolia, North Africa, North America and Greenland *etc*. (Wijk *et al*. 1959).

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